# SOFT START PRECHARGE CIRCUIT FOR DC POWER SUPPLY

## ABSTRACT

A soft start circuit for a DC-DC converter has an input reference voltage coupled to an error amplifier and to a soft start capacitor. A feedback resistor is coupled between an output node and the error amplifier, whose output is coupled to a pulse width modulator (PWM). The PWM output is coupled through an inductor to the output node, to which an output capacitor referenced to ground is coupled. Means is provided to charge up the soft start capacitor to the output voltage while the converter is disabled. As a result, when enabled, the converter will not discharge the output capacitor, but will ramp the output voltage to the voltage Vref without excessive currents.